244 [132] months. The amount of sweet potatoes grown is not closely related to the season. It depends much more on rainfall,

[131] The effects of typhoons on the plant are most noticeable after [131] transplanting. Salt water spray shrivels the transplants up and they die without developing. These conditions are more noticeable near the seashore in areas like Nagano that lack trees and tidewater shelters.

824 Like rice, all of the sweet potato plant is used. Plant residue are turned under to fertilize the soil. This turning under of the vines or their use in composts is a doubtful blessing if the plants are diseased. The good potatoes are reserved for human consumption. [231] The poor or the diseased ones are mashed up in a stone mortar with a long pole, used like a pestle, for pig and goat food. Besides using the tops as slips, women constantly cut them off for fresh greens for [262] the pigs. The sweet potato is the basic food because it is cheap, can be grown the year round in lowlands and uplands, and can be cultivated by all members of the family. As pig food, it is a means of [462] inexpensively raising animals which later have cash value. The feeding and care of pigs is usually one of the incidental chores of women.

244 184 The varieties most commonly found in these Okinawan villages are the Okinawan #100 (Okinawan no hyakugo) and varieties known locally as the benIMO, a small round tuber, and the bokuto. The two chief differences between the northern and southern villages in cultivating the sweet potato are (1) the two and three pronged hoes are much more in evidence in the north. With practice, they can be used advantageously in quickly weeding a plot while not cutting the potato itself. (2) Matsuda appears to be less dependent on the [262] sweet potato as a human food. The farmer here has more rice for him- [231] self and a greater proportion of his sweet potato crop goes for animal food.

6

The Planting of Sugar Cane and Sugar Making

● 249 Sugar cane (kibi) is grown on dry crop land, its rows often alternating on the same plot with the sweet potato. Cane may be started with cuttings, or it may be a second growth (ratoon) from the stubs of the old plant after it has been cut down for crushing. Cuttings may be purchased or selected plants from another planting are used. The slips are cut to leave three buds. These cuttings may be planted in three ways: (1) all horisontally, (2) horisontally with the cutting which comes from the topmost part of the stalk planted slantwise, or (3) all cuttings may be planted slanting.

The soil must be thoroughly worked with the ever present hoe. Plowing and harrowing are rarely done. The earth must be thoroughly fertilized. In addition, small amounts of compost may be placed under the cutting, and less often liquid night soil might be used.

In Matsuda, the stalk is cut up with a large knife. In Nagano and Hanashiro, the oshikiriba (literally, push-cut-machine) is common. This is a device with a fixed blade, curving upward, on a stand. The cane is laid on the top of the blade. The handle is pressed down, forcing the cane stalk through the stationary blade. The use of this device is not universal. In the north, the hand cutting machine was a casualty of the war.

It is worth a slight digression here to add that, in considering various techniques as evidences of a departure from or adherence to traditional methods, the effects of the recent war must constantly be borne in mind. Sugar making is a good example. Primitive methods of making it today are a return, out of economic necessity, to earlier ways because of lack of capital to replace the former machinery. In Matsuda, the continued use of the horse drawn crushing rollers is not an expression of conservatism but of improvisation and return, in lieu of anything better, to old methods previously in use. Such devices as the oshikiriba are not good examples of this because it is not a decisively superior tool. A skilled farmer can cut the cane very efficiently with his knife.

Cane cuttings are made when the plant is about six months old and before it is mature. When year old plants are used for cuttings, only the top, or the youngest part is taken. The slip used may have two or three joints or buds. The length of the cutting apparently is determined by the number of joints. In Matsuda, slant planting seems to be favored because the plant is said to receive more water and to be able to withstand typhoons better. Flat planting is faster than slope planting. From one stalk usually five or six transplants are made.

There are two plantings of sugar cane, the spring (haru-ue) and the fall (akiue). Cane planted in the spring planting, from January to March, is harvested in April of the following year. In the fall planting from July to September, the cane is harvested a year from the following December. The cane of the fall planting is harvested but the stumps are allowed to sprout and grow again. Following this harvest, the whole plant is torn out and the field is replanted with slips. Though the ratoon crop could be continued longer, the general practice is to tear up the plants after the second growth.

The slips are about 8 sun (9.6 inches) long. In Hanashiro, they are generally planted flat with the exception of the slip nearest the top of the cane stalk, which is planted at about a 45° angle, the theory being that this part of the stalk has less vitality than the others. These slips are planted about 6-8 inches apart, 8-12 inches deep in rows about 4 feet apart.

In Hanashiro, at harvest time, the sugar cane is carried on the shoulder or by horsecart and stacked in piles outside the sugar mill. Though an effort is made to crush it immediately, cuttings may remain overnight or be stacked for a day or two outside the mill. The mill

249 [374] The mill is owned and operated as a co-operative enterprise of the village. This is the only co-operative phase of sugar growing and processing; all other operations, such as planting, harvesting, the actual making and marketing of the brown sugar are done by individual growers. In Hanashiro, the steps in sugar manufacture are (1) the crushing of the cane, (2) the boiling of the juice, (3) the handling, cooling, and packing of the brown sugar.

The cane is crushed by running it through a roller driven by a gas engine. Before the war, there were two of these rollers. The juice is channelled along small concrete conduits at the base of the roller to a cement hole in the floor. This hole is about two feet in diameter and one foot deep. From this storage hole, it is ladled into the pots for boiling. In pre-war days, the machinery was better, and instead of the small concrete hole, large vats were used. The place where the sugar is boiled adjoins the room in which the crushing is done. The dirt floor of this room has two levels: one on which the pots are placed, and under which there is a trench open at the lower level for the fuel. A man standing on the lower level, in back of the building, shovels or pitches fuel into the trench. Formerly coal was used for this purpose; now plant residues and miscanthus are [372] used. Grass is fed into the fire with a pointer on a long stick. Above this trench large pans about 4 feet in diameter are set in holes.

Pan 4 Pan 3 Pan 2 Pan 1

Trench Fire

The cane juice is first strained through a cloth or wire mesh to remove large pieces of stalk and leaves. Once in the pan, a little lime (sekkai) is added to bring out the impurities. The juice is brought to a boil and the mixture skimmed. The scum (gomi) is ladled off and put in a piece of fine cloth. This is tied up and allowed to drip in the pot and then added to the other syrup. The juice is boiled for about 2 1/2 hours. It is frequently stirred with a pan attached to a long sugar pole (satonibu). The syrup is tested by allowing drops to fall from a bamboo stick to see if it has been boiled down enough.

When the boiling is completed, the syrup is ladled out into a deep round pan, about 3 feet in diameter. It is placed on a grass mat whose center piece, made of rice straw, resembles a life saver. The bottom of the pan fits into the hole. This mat with the pot is dragged outside the building into the open.

The sugar is now vigorously stirred with long poles. The hardening syrup on the sides of the pan is scraped with the hera, the same tool used in the transplanting of the sweet potato tops. The mixture is stirred about 15 minutes with frequent testing. The harder layer is scraped off the sides, being mixed with the more liquid syrup in the bottom of the pan. These hardened scrapings speed up the hardening

of the rest of the syrup. With the stirring finished, the sugar for contemplated home use is spread out in pans to harden. That intended for export is put in specially prepared boxes, furnished by Naha export firms, stencilled and ready for shipment.

In Matsuda, the harvesting of the cane is the same as in Hanashiro. But the old Okinawan and Japanese method of crushing the cane is still used because the destroyed machinery has not been replaced. The cane is crushed outside. Three large steel rollers are placed side by side in a frame, with gear teeth on the top meshing. A sweep about 30 feet long is attached to the center wheel.[6] A horse draws the sweep, revolving the wheels. The cane is fed into the left roller, caught as it comes out, and then fed back into the right roller. The juice is caught below. The residue (kibikasu) is left outside to dry to be used later for firewood. The juices which have been caught are taken in a low lying building with a tile roof, put in a large round pot (marunabe) or a rectangular pan (kikunabe). An open fire place is used for boiling the juice; the fire place is sunk in the ground and lined with stone, with a small opening at the bottom for putting in firewood. This mill is privately owned, the property of an association (kumiai) of about twenty men who rent it out for individual processing. As in Hanashiro, sugar is the production of the individual small farmer from its first planting until its sale for export or for home use.

7

Other Crops

The most important of the other crops commonly grown in the villages remain to be considered.

(1) Soy beans (daizu in Japanese, Glycine max Merrill). In all the villages, soy beans were planted once a year, sowing in the first or second month, and harvesting in the fifth month. The field is prepared by making furrows and putting a mixture of chopped up green grasses and some animal manure, or a commercial fertilizer, in the hole in which the seed is planted. The farmer then waits for rain. After rain, he plants the seeds about three feet apart in rows from one shaku five sun (about 18 inches) for very good land to one shaku one sun (about 13 inches) for usual land. The plant is harvested with the small sickle. The beans are threshed by a flail (gurumanbo in Okinawan). The residues are used either for fertilizer or fuel.

6 This device is also relatively unchanged since Perry's time. The only difference is in the wheels which were formerly of wood, geared together by mortise and tenon joints. Stone crushers were also used formerly. In Hanashiro, I saw one of these stone rollers lying in the yard of a villager. For sugar making operations in the 1850's, see Hawks, Perry's expedition to Japan, II, 20, 30.

1: Glacken E-5 (1951-1952) 1953 AC7 Okinawa AC7

1

Village Shops and Businesses

Village stores, small in number and modest in size, furnish their own people many essential services, but the offerings differ from place to place in number and kind, so that there are always commercial contacts of a sort with nearby villages or towns. This is brought out in the accompanying table of business and personal service establishments in each of the villages.

Village Shops, Businesses, Personal Service Enterprises

Type	Number of Enterprises in:			
	Hanashiro	Hinatogawa	Nagamo	Matsuda
Rice Mills	1	a/	a/	1
Sugar Mills	1		1	1
Small Retail Shops	3	5	3	5
Power Plant		1	b/	1
Import Store	c/	1	b/	1
Saw Mill				1
Blacksmith	d/	d/	1	
Retail Butcher Shop		1		
Motion Picture Theatre	e/	e/	e/	f/
Public Bath House	b/	2	b/	1
Village Inn		1		g/
Eating Places		1		
Barbershop	g/	e/	a/	1

a No need for rice mills, no rice grown
b Served by Hinatogawa
c In nearby Asato
d Nagamo serves these and other villages in the township
e In Horikawa, opposite Hinatogawa
f Served by Ginoza village
g Served by Oushichan village

Rice mills (seimaisho) are recent in rural Okinawa. The mill in Hanashiro was installed in 1940. It serves nearby villages. The mill in Matsuda, also a recent introduction, is more modern. In each case, the mill has two machines of Japanese manufacture, one for hulling, the other for polishing.

Sugar mills (seitojo) vary in quality in the communities. Hanashiro has a machine for crushing cane. In Matsuda, war destruction

249 forced a return to crushing the cane by the use of rollers driven by a horse at the end of a sweep. Before the war, Matsuda had sugar mills driven by machinery. Mills may either be village owned, as in Hanashiro, or owned by small co-operatives, like that in Matsuda whose members rent it to others when not using it themselves.

423 [427]

443 [467]

Village stores generally occupy the front part of a family's living quarters. They are operated mainly by women. A woman past middle age sitting on the floor of her shop, talking with visitors or reading the paper, is a familiar sight in an Okinawan village. A village may have several tiny stores. They do not compete with one another in the commercial sense of the word. Prices are the same. Their inventories are the standard ones. The chief differences are in size and variety. Some sell the strong alcoholic drink (awamori) called sake in Okinawa.

[373]

Each storekeeper has a clientele of friends and relatives, but one is not under social obligation to repeatedly trade at the same place. Relatives sometimes own adjoining shops. In Japan, it is said that once a person starts trading at a shop he continues to do so. To switch would deprive the shopkeeper of business that could be counted on, and imply dissatisfaction with the service rendered. The first purchase creates mutual obligations between the storekeeper and his customer which are not broken casually.[1] This is not the case with these village stores. One patronizes the shop that is convenient, that is open when one wants to buy, that has the desired article. There is an informal atmosphere and lack of bustle in these tiny shops because so many are operated for supplementary income by wives or female relatives of the breadwinner. A wife may sit in her shop, as I have often seen her in Minatogawa, taking care of her baby, sewing on her treadle sewing machine, and interrupting her work when necessary for a customer. The cash involved is small, often only a few yen, and money is carefully accounted for. These shops satisfy a surprising amount of the village demand for food, food supplements, notions, clothing, and household goods. Larger, more expensive, or more specialized items such as books, suits, furniture are in the towns like Itoman or Naha in the south, or Nago and Ishikawa in the north.

[171]

[434]

[404]

An inventory of one of these village stores indicates the types of articles in frequent and constant demand. In one typical store in Minatogawa the following purchases could be made:

Foods

[262] [271]

Starch
Condensed milk for children

1 I was told this by Japanese and by Nisei who were in Japan during the occupation. I do not know how widespread or how characteristic this practice is of all retail trade there.

vary according to the problems and conditions in a village. The first meeting of the year is usually held around Jan. 2, when there is a party. The young men, even those of 17 drink sake at this time. Young women, who do not drink, contribute gifts of candy and soft drinks.

In Hanashiro, the young men cultivate a field of their own and sell the produce. They maintain a carp pond. (Before the war, there were two such ponds). They also work out for wages. Every morning rotating groups work for two hours either in the association's field or for wages. This is done before the daily work. Their earnings of Y8 an hour, low by Okinawan standards, are accumulated for special projects, such as the annual athletic meet. Occasionally they help with road maintenance, though this is a job for all the people of the village. The carp in the pond are sold to the villagers, normally in July, for medicinal purposes.

In Minatogawa, the young men's and the young women's association are combined. The head is a young man, the second in charge a young woman. They help in times of emergency and with repairing of typhoon damage. Since there are no fields or carp ponds, they are not so active as the young men of the agricultural villages. Sometimes they do night guard duty around the village, though this practice now has fallen into disuse.

In Matsuda, the association performs tasks similar to those in Hanashiro. Rotating groups, arising at 4 in the morning, do two or three hours work before starting their own. Absentees are fined Y20 and tardy members Y5. The young men grow sugar cane on land loaned free of charge by farmers. The purpose of the project is to increase sugar cane production by providing transplants. The Matsuda group also works in the forests, for which they receive Y100 per day per person. With the permission of the village headman, they get firewood from the forests, sell it to provide funds for their projects. They stand by during typhoons. But they also have discontinued the custom of providing a 3 or 4 member patrol to walk around the village in the early morning hours. Since thievery is uncommon, the patrolling is no longer required. When the village gong sounds a fire alarm, all the young men assemble. At the harvest festivals, such as the autumnal equinoctial holiday, the young men may present a play, do Okinawan dances, and supply the motive power for the village lion.

The leader (dancho) of a young man's association usually is from the older age group. Meetings are held twice a month, normally on the 1st and 15th. The annual parties are either at the beginning or the end of the year. In all the villages, the young men's associations have a leading part in the annual athletic meetings. Most of their accumulated funds are expended at this time. They not only participate, but do much of the preparatory work in co-operation with the school teachers.

One result of membership in the young men's associations is that the age range (an 8 year span) of one's acquaintance is broadened.

Spindler & Spindler E-6 (1954-1955) 1983 AC7 Okinawa AC7
Taira

stored and are kept under the house or on a special shelf on the rafters.

Onions, giant radishes, beans, and cabbages are also raised on farm lands. Night soil is rarely used for such vegetables nowadays but is still used on potatoes. Several of these vegetables as well as others are raised by women in small "home-garden" plots.

The hardest working period during the year is in July and August. Within a few weeks after the rice harvest, the soil must be made ready for the second rice crop or the soil must be prepared for dry paddy potatoes. This is also the time for planting the chief sugar crop. All this takes place during the hottest time of the year, when efficiency is greatly reduced by heat and humidity.

Sugar harvest and processing fall in the period between January and March. One field after another is harvested by the owners after arrangements have been made for a date when the cane can be processed. Such arrangements are made with the director of the Taira cooperative, who supervises operations of the sugar mill which is owned by the cooperative. The whole family helps on the day of processing. Women carry bundles of branches and light firewood to heat the kettles. The operation requires the help of someone to feed cane into the small, diesel engine driven press, some to carry the pulp away, and others to watch the kettles in which extracted juice is boiled down to molasses. Finally, a few persons stir the brown residue in wide, open pots until it becomes stalted. Then it is put into tubs that hold about 132 pounds.

The agricultural market for cash crops was totally disrupted at the end of World War II. There was no immediate outlet for sugar products; crops had been destroyed or neglected, and the sugar mill was demolished in the fighting. But by this time most people were too satisfied with the great returns from forest work to invest much time and energy in a crop which takes a year and a half to show any material results. Nevertheless, sugar was the first crop to find a market again.

Pineapple, introduced recently in Taira, has a promising future. Tea is still grown in small quantities, but few families grow more than they need for their own use, although it is a good potential cash crop for this area.

ANIMAL HUSBANDRY

Raising pigs is an important source of cash income for all households in the village. Even the poorest families own at least one, but few families have more than two; in the central village the average is about 1.2 per household. Pigs are given special care and attention.

CHAPTER III: AGRICULTURAL HISTORY, LAND USE AND DIET

F. R. Pitts

121 178 The concept of the unchanging Orient certainly fails to appear true in the case of Okinawa, when the past is examined closely. Indeed, it seems hard to find an area where so much change has been accomplished so fast. The following is designed to show some major aspects of that change, particularly insofar as the farmer is concerned.

1. Agricultural History

175 241 198 The Early Days As early as the 1730's when the great Okinawan statesman, Saion, urged the growing of the sago palm 'sotetsu', farmers were already used to orders and suggestions from the gentry as to modification of their traditional ways. But it was not until the growth of population and the money economy that changes were to be brought about, not so much by orders from above, but chiefly by the workings of economic forces.

175 177 433 249 The ultimately most effective agent of change had been the introduction of the sugar cane plant in 1623 and its concomitant technique of sugar manufacture.[1] It was not until a decade after the Japanese took over the islands, however, that sugar production began to increase, and not until after the Russo-Japanese war that sugar really became an important crop in the economy. By 1939 the production of sugar amounted to more than a million tons, and production exceeded consumption by ninefold.[2] By the end of the 1951-1952 winter pressing season, production had declined to 256,000 tons.[3]

175 621 About the time of Commodore Perry's visit the population of Okinawa had begun to grow, and new areas were settled by both commoners and the gentry. Nanahan dates its existence from this period. Of the first three families to settle here, one came from Shuri gentry, and two others were commoners from the main settlement of Tomoyose. Of the seven settlements of the village of Yamada, three were settled by commoners and one by the gentry. All had come from the urban areas of the south in the latter part of the last century. [829] In Okinawa everyone seems to be aware of his place in history, and in the older settlements one often hears the remark, "...they are newcomers; they have been here for only two hundred years."

175 241 178 433 [179] In general the agricultural history of Okinawa falls into three periods. The first saw a self-sufficient economy, in which banana cloth was made in the village. The chief crops were millet, arrowroot, and sweet potatoes. With the introduction of a money economy, and its further intensification under the Japanese, sugar gradually turned from its previous use as a home confection to a full money crop. Rice acreage fell as more sugar was planted, and sweet potatoes found a greater place in the diet. The old crops of millet, cassava, and arrowroot were all but abandoned in Shimajiri, and became less important in the north. The third period is essentially the post-war and still continuing one, in which the growing of vegetables for the

1 Navy Handbook, p. 240.

2 CAARI, p. 156.

3 Summation of U. S. Army Military Government Activities in the Ryukyu Islands, July-November 1946, p. 25.

464 the bulldozer had done the basic shaping of the field, a new member of the
[465] 'han' was hired to finish the pounding of the paddy walls. He was paid ¥900 for six days' work, and was required to provide his own lunch. His employer had spent the first year after the war in Hokkaido, working for no money but receiving one 'shō' (3.18 pints) of rice a day. Later he rented a horse and cart from its owner at ¥60 a day and pocketed anything above that amount that he earned. During planting and harvest season he worked in the rice fields.

445 Horses are rented out by their owners to other people, but when a cow
426 is rented the owner's services are always included. No farmer trusts anyone
435 else with his cow. A man-and-cow hire out for ¥250-300 a day, depending on
379 the distance they must travel. A horse is most often rented to pull the sweep
• 299 of a rotary sugar-press, and is paid according to the amount of juice of black sugar produced. Various prices are quoted. ¥100 is paid for each 'chō' (100 kin, or 132 pounds) of black sugar produced. One farmer charges for the use of his horse a flat rate of ¥1 for each gallon of juice squeezed. Another charges ¥60 for 50 gallons of juice if the renter lives in Nanahan or close by, and ¥70 if he lives farther away. Horses were scarce the first year after the war, and fifteen men together pulled the sweeps of the rotary presses.

464 Buying of Labor and Services Many times farmers have need of a great amount
575 of labor in a short period of time. Then they are most likely to call upon the services of the young people's group, the 'seinendan'. One Nanahan farmer in 1952 had this group make a paddy field for him from a dry field. In 1953 another farmer had the group make a 300 'tsubo' dry field for him out of 'arechi', or war-destroyed land. The 'seinendan' also hires its members out to work for people who need help in the busy season. The following daily wage rates were quotes: women and new
[465] members, ¥40; men of 18 and 19 years, ¥50; and men of 20 years and above, ¥60.

445 Abolition of the stringent Japanese regulations compelling farmers
[643] to raise sugar has resulted in the reconversion of many sugar fields to rice paddies. At first this was done exclusively by hand labor, but now bull-
[433] dozers are more in favor. One farmer had 420 'tsubo' of dry land converted into paddy at a total cost for bulldozer leveling of ¥6,300. The rate for machine and operator was ¥600 an hour. The farmer owns 450 tsubo more of paddy, which provides rice for one meal a day. With this newly-converted
[262] field he plans to have his family eat rice twice daily. Labor charges for finishing the new paddy will run about ¥4,000, according to estimate.

One of his relatives is a repatriate from the hemp-growing colony at Davao, in the Philippines. This man bought land from a villager who was dissatisfied with country life, and hired a bulldozer to convert it to paddy.
[435] For conversion of 816 tsubo he paid bulldozer charges of ¥12,000 and ¥8,000 additional for labor. He had bought the dry land ('hatake') originally for ¥65 per tsubo.

About the only other service regularly engaged is the hulling and polishing of rice. Nanahan people take their threshed rice to a neighboring village where there is a 'seimaisho' (rice-cleaning mill), and pay only cash for the service. They return home with the polished rice and the bran, or

'nuka'. The latter is fed to pigs, cows, and chickens. The rice polisher keeps the hulls (mumigara), but the farmers have free access to the hull pile should they want to use it for stuffing pillows. People in Kanegusuku do not usually pay in cash, but allow the miller to keep about six percent of the polished rice as multure. 445 [437]

Exchange of Services In order to lessen the amount of money used in transactions, rural folk resort to exchange of labor as much as possible. However, the exchange is based upon fairly rigorous ideas of reciprocity, and a person who has been helped is expected fully to return the favor. A Nanahan man built a house with a tin roof---the only one in the village---with the aid of his wife's brother, who was a carpenter. In return he spent a greater number of days aiding his brother-in-law in construction of a new house---paying back more days because of his comparative lack of skill. People envy the carpenter, who did not finish high school, but attended a four-month carpentry school instead. "He now makes more than a high-school graduate, and has four apprentices working for him." 476 [137] [463]

Okinawan youths very early learn the patterns expected in cooperative labor. The custom of iimarū is one of teen-aged boys' going around in a group to work the fields of the father of one of the boys, and moving on in turn to the fields of the other fathers. [383]

Some loosening of patterns of use of horse-drawn sugar mills was recorded. For instance, during the prewar period the dominant family in Nanahan had monopolized one particularly well-located press and boiling shed. Now they share its use with all the families living in the valley where the dominant family's 'honke' is located. [178] [249]

In Yamada mutual assistance through exchange of labor is called yiisē. For example, a farmer who wants to transplant rice gets help from among his relatives. One person comes from each family that can spare one, with the assurance that it will receive one person in return. If the labor cannot be returned for transplanting, the people owing a day may fill in with work on a dry field or aid in building a new house, and so forth. Thatching a roof with kaya grass is also yiisē, but it partakes somewhat of the nature of a 'moai', or mutual loan group. People from the whole village may come for this. They bring bundles of grass---one, two or three---and the amount is written down so that the same amount may be returned when that person's turn comes. The similarity to 'moai' may be only in the fact that there is a written record. [452]

The probationary adoption of a 'yōshi' may be considered a form of exchange of services. A man without an heir may take into his house a nephew, say the third son of his brother, with the intention of adopting him should the boy be serious and hard-working. If the boy should not prove amenable to the arrangement---one boy said, "I stayed with my uncle two years, but left because I wanted to get an education"---his labor is considered to have paid for the expense of keeping him. [597]

2. Rural Industries

178 439 543 Generally speaking, it can be said that much less effort is put forth in the countryside now toward home industries than was the case before the war. In Nanahan making of products at home has declined to the point where rather than being made for sale, they are made only for exhibit at the fair given annually at the local primary school. Even here considerable urging is required by the village officials, and entries are forthcoming only by an appeal to pride in one's village's standing at the fair.

249 257 **Sugar Presses and Mills** Okinawa has two modern western-style sugar refineries, one at Haebaru and one on the isle of Minami Daitō. At the other end of the scale there are the some-400 horse-drawn rotary mills. Between these there are perhaps a dozen or less mills which utilize gasoline-powered motors and are geared to operate on a much larger scale than the rotary presses.

471 257 461 In rebuilding the big mill at Tomoyose which had been destroyed in the war, each family that owned stock in the mill contributed the labor of one person per day of building. On a typical day they started work at eight, had a fifteen-minute "break" at ten, and returned home for lunch for an hour at noon. After an afternoon "break", the work continued until six. Breaks and resumption of work were announced by pounding on an empty oxygen cylinder of large dimensions. The only break I observed lasted for 24 minutes. Tea was served to everyone, and the men sat around discussing how they would be able to pay for the building---which was made of sandy limestone from Minatogawa---and 471 where they would borrow money. The sugar produced was to be sold to the Ag- 257 ricultural Federation in Naha, as is the sugar produced at the smaller mills. However, the sugar was to be sold in 50 kin (66 pound) bags rather than in [433] 100 kin barrels. The potential annual output was estimated at 15,000 bags, or approximately one-half the Tomoyose village production.

256 **Kanegusuku Rice Mill** There is one small rice mill in Kanegusuku. All the villagers who have rice land---or about 70% of the families---utilize this mill for polishing. No one in the village uses the [439] old-fashioned hand mill. The owner of the rice mill says that most of the villagers cannot afford to pay cash for having their rice polished. Consequently he takes as multure about two-thirds of one 'gō' from each 'shō' of rice. This amounts to approximately six percent of their rice. The villagers evidently trust him completely, for no one was seen standing around watching while their rice was being polished.

The owner says that his machines are old and break down frequently. Three machines are required for the whole process. This is not a full-time job except during the harvesting periods. The young man who is owner regularly works on his family's lands. All operation and maintenance are done by him; he does not hire a helper even in the busiest times.

286 433 [178] **Mat-Making in Kanegusuku** The three-cornered sedge ('sankaku-i') is a reed grown in a wet field like rice, and is the basis of 'tatami omote' and 'goza' manufacture, the chief home industry of Kanegusuku. Production of the reed in Kanegusuku today is about one-tenth the pre-

[Kitazato]

175 621 727 It is said that the division of the village cut across family lines and that the motivating factor in a household's choice of one site over another was the location of their remaining landholdings on the periphery of the village. Another factor was the presence of relatives in neighboring villages from whom they might secure land for rental. Thus, Kijikina is largely made up of households which have their lands on that side of the field or have relatives in neighboring Furushima; the Hama people mostly own the land at the north side of the field.

175 621 The Pre-war Village Prior to the war the village was, according to 'son' officials, a very prosperous community and a great economic asset to the 'son'. It possessed nearly 173 acres in arable land, most of which [249] [434] [238] [439] was flat or gently rolling. The soil was well suited to sugar cane which was the chief source of income for the village; cattle-raising for export to Japan provided an additional source of income.

Unlike Kanegusuku the lineages were said to be rather weak in Kitazato; there were a number of different kin groups, and no one of these was [361] dominant. The houses of the village were not tightly nucleated like those of the typical Okinawan village but were scattered about in a loose grouping in the midst of the best agricultural land.

621 311 727 Land Loss At the present time (May, 1954) approximately 39% of the total land area of this village is in airfield, and an additional 34% of the total area has been ruined by activities related to its construction (sand dumped onto fields, top soil removed, erosion, etc.). There remains but 27% of the total land area for the use of the villagers, and of this only a small percentage is in arable land, since most of the good, flat farmland was lost to the airfield. The total amount of arable land remaining is [134] 11,895 'tsubo' (less than ten acres), and this averages out to about 148 'tsubo' or 0.12 acres per household, with approximately five persons in each house. The average amounts of arable land per household in Kanegusuku, Okinawa, and Kitazato compare as follows:

Kanegusuku	---	1514.2 'tsubo'
Okinawa	---	1037.2 'tsubo' (per farm household)
Kitazato	---	148.7 'tsubo'

Land loss to the airfield affected every family in the village; some families lost all of their lands, a very few managed to retain most, but the majority of villagers (70%) lost nearly all of their holdings. For example, the mayor of the village held 2470 'tsubo' before the war and now has 570 'tsubo' left; yet, he is considered one of the more fortunate. To compensate for their losses they now farm some land which was previously left idle: "We would not have farmed such land before the war as we are farming today." Some have rented lands from neighboring villages, and a few have been given land by relatives in these villages.

621 829 727 Land Payment The people of Kitazato strongly feel that they are not being paid adequate remuneration in terms of current rental values for their land. They are well aware of the fact that the same U. S. military